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Sent: 3/10/2014 7:34:21 PM
To: Moriarty, Thomas [Moriarty.Thomas@epa.gov]; David Fischer [david.fischer@bayer.com]
CC: Larry Kapustka [kapustka@shaw.ca]
Subject: Comments/Questions Pollinators (Chapters 2-6)

Importance: High

Hi Tom, Dave,

Larry sent along some comments/edits, and I thought that it may be easier to send them in the body of an email so you could respond directly. There are too many proofs popping around now, and I don't want to confuse matters by throwing another handful into the fray! I've incorporated any further changes I found, too.

Most of these just need approval, but there are a few that need language suggestions – I'm happy to incorporate all changes into my master proofs. I'm also happy to talk through these on the phone! Call if that is easier.

All the best,
Jen

Chapter 2:

1. The introductory sentence needs to be tightened up. It reads, "A key goal of regulatory authorities is to protect non target organisms from potential adverse effects of pesticides." Not all regulatory authorities are tasked with pesticide safety. It is not true for all environmental regulators, either. Can you suggest alternate wording, please?

Chapter 3:

1. Reduce the redundancy in the introduction of Chapter 3. If you could compare this introduction against Chapters 1 & 2 and reduce the repetition, it would improve the flow.
2. Please approve the change (page 5, last paragraph): "The need to thoroughly explore pesticide risk assessment for non-Apis pollinators is more important now than in the past as many areas around the world are seeing an increasing demand for insect pollination. The availability of managed honey bees and the consequential rising costs for honey bee pollination services has decreased, leaving the needs of agriculture unmet." (Note: Also confirm the validity of the statement, as the need for risk assessment occurs before there is a serious problem, not after.)
3. Do you think it is too late to replace the paragraph with the list of non-Apis species and the plants they pollinate with a table?
4. Please approve this change (page 7, first full paragraph): "Specifically, they recommend that at least one solitary managed species, such as wood-nesting alfalfa leafcutting bees (*M. rotundata*) or blue orchard bees (*O. lingaria*) (Abobtt et al. 2008; Ladurner et al. 2008), and one managed, social non-Apis bee, such as bumble bees (e.g., *Bombus impatiens* or *Bombus terrestris*) in temperate climates (Thomspson and Hunt 1999) or highly social stingless bees (e.g. *Melipona* spp. Or *Trigona* spp.) in the tropics (Valdovinos-Nunez et al. 2009) is incorporated."
5. In this chapter and throughout: I have replaced most slashes with "or." Would it be acceptable to also replace all "and/or" with "or" as well?
6. (page 12, 1st full sentence under 3.3 sub header): Instead of directing the reader to the table and the figure, could you articulate what bit of information the reader should know and reference the table and figure?
7. (page 12, second paragraph under 3.3 sub header): Define "field kill" please.
8. (Same paragraph as above): Please approve the change: "When foragers are killed in the field, the loss of these bees may, to a certain extent, be compensated by the colony and may mask the impact of these deaths."
9. (first full sentence of 3.4 conclusion): As with the table/figure comment, what information is pertinent to this chapter? The future chapter numbers can be put into parenthesis for additional information.
10. (Second paragraph under 3.4): Please approve the change: Strike "Workshop attendees believed" add "is." Full sentence should read, "For several reasons, it is important to consider..."
11. Page 14 and throughout the text, eliminate "potential" as an adjective for "risk."

Chapter 4:

1. Please approve the change (page 19, bullet 2): “the estimated or measured pesticide exposure concentrations derived from modeling, testing, or monitoring efforts;”
2. Please approve the change (page 19, bullet 3): “information from incident reports or surveys regarding the actual or potential impacts of pesticides on a taxon;”
3. Please approve the change (page 19, last sentence): “Regulatory authorities in turn use risk assessment tools to determine whether the use of a pesticide is consistent with its general goals.” (Strike “such as protecting human health and the environment.”)
4. Please approve the change (page 20, end of first paragraph): Replace “in support of” with “to be used in”
5. Please approve the change (page 20, 2nd sentence of 2nd paragraph): Replace “supportive of” with “consistent with”
6. Please approve the change (page 20, bullet ii.): Strike the parenthetical
7. Please check for accuracy (page 21, 1st paragraph): “...assessment endpoints have traditionally been defined as the growth, reproduction, and survival of an organism.” Is this so, or are they seldom expressed at the organism level, but rather at the population-level or higher? The measurements tend to be at the organism-level, but this has more to do with the linkages to toxicity test methods than to the limitations of the risk assessment procedures.
8. Please check for accuracy, and approve the change (page 21 paragraph 2): “When measurement endpoints are appropriately linked to assessment endpoints and specific protection goals, they then support generic protection goals (Figure 4.1; see Table 10.1 for specific examples of protection goals, assessment endpoints, and measurement endpoints).” (Strike sentence starting Figure 4.1)
9. Please approve the change (page 21; last sentence of 4.4): Strike from Figure 4.2 on, replace with a parenthesis (Figure 4.2) after “clear” in the preceding sentence.
10. Please verify that there is only one reference required in this chapter.

Chapter 5:

1. Please approve the change (page 25, 2nd paragraph): replace “risk hypothesis” with “risk scenario.” Same sentence, replace “test that hypothesis” with “evaluate the scenario.” (Here and throughout.)
2. Please check for accuracy (pages 25-26; last sentence): “If the estimate of risk indicates that proposed use is not consistent with the protection goals, then risk mitigation techniques may be implemented proactively to resolve concerns.” Actually, the purpose of the higher tiers is to develop sufficient information so that one can make an informed decision. If too much uncertain remains after Tier 1 or Tier 2, then efforts are made to reduce the uncertainty in the subsequent tier(s). Mitigation can be introduced at any point in the tiered process.
3. For your consideration (page 27, paragraph starting “The EPPO” and 5.2.2): Can we delete both?

Chapter 6:

1. Please approve the change (page 30, under 6.1): “The objective of PF is to develop a working conceptual model that describes the potential exposures to and resulting effects of a stressor...”
2. Please approve the change (page 35, just above 6.2): “Diagrams should reflect or document the “state-of-the-science” and degree of certainty...”
3. Please approve the change (page 35, same sentence): “...to ensure that they reflect and communicate the regulatory agency’s policies and protection goals prior to analysis.”
4. Please approve the change (page 37, 6.2.4.2): “The conceptual model diagram (Figure 6.2) illustrates...”
5. For your consideration (page 38, 6.2.5): A NOAEC by definition is not a measure of effects. Can we replace “NOAEC” with “ECx”?
6. Language needed (page 38, 6.2.7, paragraph 2): Reference to NOAEC; not a measure of effect, as noted above.
7. How does “tunnel” relate to other containment techniques? (page 38, last paragraph) Should we strike the parens, or would it be appropriate to expand on this here or elsewhere?

